

Pennsylvania, and West Virginia; on 10 to 14 in Indian Territory, Massachusetts, New Jersey, New York, South Carolina, and Wisconsin; and on 5 to 9 in Connecticut, District of Columbia, Maine, Minnesota, North Dakota, and Vermont. The only states in which thunderstorms were reported on less than 5 dates were Montana, New Hampshire, and Rhode Island, where they were reported on 2 dates.

West of the Rocky Mountains thunderstorms were reported in Arizona on the 3d, 21st, 23d to 28th, and 30th; in California on the 1st, 2d, 3d, 6th, 12th, and 21st to 25th; in Colorado on the 2d, 4th, 6th, 7th, 8th, 10th to 14th, 16th, and 23d to 30th; in Idaho on the 23d; in Nevada on the 3d, 4th, 9th, 10th, 11th, 13th, 15th, 16th, and 21st to 29th; in New Mexico on the 3d, 4th, 17th, 18th, 19th, and 23d to 31st; in Oregon on the 2d, 6th, 7th, 8th, 10th, 15th, 23d, 24th, 25th, and 29th; in Utah on the 10th, 11th, 16th, 22d to 27th, 29th, and 30th; in Washington on the 6th; and in Wyoming on the 1st, 8th, 10th, 12th, 23d, 24th, 27th, and 29th.

AURORAS.

The most important auroral displays of the month were noted from New England to Montana and southward to Missouri and Oklahoma Territory the night of 18-19th. In New England the display was very brilliant, and at its height covered nearly the entire sky, with a well-defined corona near the zenith.

Auroral displays of May, 1892.

Date.	Station.	Extent of display.		Remarks.
		Azimuth.	Altitude.	
1	New Whatcom, Wash...	°	°	Arch, with luminous beams.
2	Tatoosh Island, Wash..	In the n.	.....	Seven streamers of a pale yellow color.
7	Alpena, Mich.....	.....	30	Arch, and beams of white light.
7	Marquette, Mich.....	135 to 195	25	Arch, with irregular rays of light.
8	Milwaukee, Wis.....	In the n.	15	A light arch.
16	Sault de Ste. Marie, Mich.	135 to 225	25	Electric blue color, with beams of light.
18	Manchester, N. H.....	105 to 245	60	Bright yellow light, with streamers to zenith.
18	Burlington, Vt.....	.....	Zenith	Streamers.
18-19	Boston, Mass.....	110 to 280	90	Corona formed 5° south of zenith.
18-19	Woods Holl, Mass.....	100 to 260	20	Waves of light to altitude 85°.
18	Cambridge, Mass.....	Covered larger part of the sky.	.....	Waves of pale green light met 5° south of the zenith, from which point streamers radiated in all directions, those south of zenith stopping in altitude about 75°. Center unsteady, changing position rapidly. Display observed from 8.45 p. m. At 10.15 p. m. arch of 20° altitude in the north, with shifting lights.
18	New Haven, Conn.....	90 to 270	Zenith	Streamers and "merry dancers" of white and pale yellow.
18	New London, Conn.....	135 to 225	70	Pale yellow light, with streamers.
18-19	Buffalo, N. Y.....	110 to 205	40	Waves of light and "merry dancers."
18-19	Oswego, N. Y.....	.....	*	Double arch 1 a. m. 19th.
18	Columbia, Mo.....	In the n.	45	Arch, with streamers.
18-19	Bismarck, N. Dak.....	190 to 270	Zenith	Irregular beams of light.
18	Greenfield, Iowa.....	In nne.	.....	Streamers.
18	Yankton, S. Dak.....	140 to 220	40	Arch, with faint rose-colored beams.
18	Helena, Mont.....	In the n.	Zenith	Light resembled the dawn of day.
18	Gate City, Okla.....	175 to 195	40	Numerous streamers of white light.
19	Rapid City, S. Dak.....	90 to 270	†	An arch of white light.
22	Marquette, Mich.....	135 to 270	15	Diffused light.

* 10° to 20° south of zenith.

† Beyond zenith.

MISCELLANEOUS PHENOMENA.

DROUGHT.

A report from Saint Thomas, W. I., dated the 14th, stated that the long drought was broken, and that unusually heavy rain had fallen at that place and over the Windward Islands. In Florida the drought continued until the 28th, when thunderstorms, with heavy precipitation, occurred generally over the state. The remainder of the month there was a fair distribution of showers, except in localities in the western part of the

state. The abundant rainfall was attended by a marked improvement in the condition of crops. Reports for the early part of the month from Charleston, S. C., and Augusta, Ga., indicate that rain was badly needed in those sections. The drought in southeastern Texas was broken on the 16th. A report from Fort Stanton, N. Mex., dated the 25th, stated that the protracted drought was injuring crops in the mountain districts.

STATE WEATHER SERVICES.

[Temperature in degrees Fahrenheit; precipitation, including melted snow, in inches and hundredths.]

The following extracts and summaries are republished from reports for May, 1892, of the directors of the various state weather services:

ALABAMA.

Temperature.—The mean was 2.1 below the normal; maximum, 100, at Geneva, 25th; minimum, 36, at Healing Springs, 22d; greatest monthly range, 67, at Healing Springs; least monthly range, 34, at Chepultepec and Jemison.

Precipitation.—The average was 0.57 below the normal; greatest monthly, 8.94 at Pushmataha; least monthly, 0.86, at Newton.

Wind.—Prevailing direction, south.—*P. H. Mell, Observer, Weather Bureau, Auburn, director.*

ARIZONA.

Temperature.—The mean was about 4.0 below the normal; maximum, 115, at Fort Mohave, 19th; minimum, 13, at Whipple Barracks, 6th; greatest monthly range, 76, at Whipple Barracks; least monthly range, 32, at Dos Cabezas.

Precipitation.—The average was about 0.05 below the normal; greatest monthly, 7.55, at Flagstaff; least monthly, 0.00, at Bisbee, Chiricahua Mountains, Fort Bowie, Navajo Springs, Teviston, and Walnut Ranch.

Wind.—Prevailing direction, southwest.—*J. C. Hayden, Observer, Weather Bureau, Tucson, director.*

ARKANSAS.

The month was remarkable for the great amount of rainfall.

Temperature.—The mean was 1.3 below the normal; maximum, 95, at Keesses Ferry, 4th; minimum, 36, at El Dorado, 22d; greatest monthly range, 53, at Hope; least monthly range, 28, at Madding.

Precipitation.—The average was 5.55 above the normal; greatest monthly, 15.80, at Dallas; least monthly, 2.93, at Greenville, Miss.

Wind.—Prevailing direction, south.—*M. F. Locke, Commissioner of Agriculture, Little Rock, director; F. H. Clarke, Observer, Weather Bureau, assistant.*

CALIFORNIA.

Temperature.—The mean was 2.6 below the normal; maximum, 107, at Bakersfield, 21st; minimum, 29, at Fort Jones, 8th; greatest monthly range, 69, at San Ardo; least monthly range, 47, at Oakland and Yuba City.

Precipitation.—The average was 1.67 above the normal; greatest monthly, 7.58, at Georgetown; least monthly, 0.28, at Bakersfield.

Wind.—Prevailing direction, west.—*J. A. Barwick, Observer, Weather Bureau, Sacramento, director.*

COLORADO.

The continued cold weather was unfavorable to crops.